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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,717	08/25/2003	Darren Neuman	1875.4460001	9853
26111	7590	04/21/2006	EXAMINER	
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			BAKER, STEPHEN M	
			ART UNIT	PAPER NUMBER
			2133	

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/646,717

Applicant(s)

NEUMAN ET AL.

Examiner

Stephen M. Baker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 090505.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because:

In Fig. 3, each box element (302, 306, 308, 312 and 324) should be descriptively labeled in English, such as by adding "COMPARE" in box 306, "SYNC DETECT" in box 312, "CRC MODULE" in box 308 and "REGISTER" in boxes 302 and 324.

In Fig. 5, the meaning of "*substantial*" in "*substantial synchronism with a first sensed synchronization*" (508) is unclear and appears to imply that synchronism with a nearest sync marker other than the "*first*" is sufficient to meet the step (508) function. The meaning of "*substantial*" in "*substantial synchronism with a last sensed synchronization*" (510) is unclear and appears to imply that synchronism with a nearest sync marker other than "*last*" is sufficient to meet the step (510) function. Accordingly, "*substantial*" in both steps (508, 510) apparently should be deleted.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

In the "*BACKGROUND OF THE INVENTION*" it is stated that during "*bench testing*," the "*conventional software routines ... may be impractical*," allegedly due to "*overall cost and test set-up complexity*" and "*since loading of the conventional software routines is a time-consuming process*" [0008]. The examiner's understanding is that "bench testing" is a kind of testing that is characterized by simulated input. The disclosure offers no explanation of why simulated input would influence the cost, set-up complexity, or loading time, of a software test routine. The examiner suspects there is no such influence, and so the "*BACKGROUND OF THE INVENTION*" is considered to be poorly worded and confusing

In the "*DETAILED DESCRIPTION OF THE INVENTION*," Fig. 1 is described as showing a "*conventional software technique*" meaning that the description of Fig. 1 is apparently placed in the wrong part of the disclosure.

The description of Fig. 1 indicates that, by means involving interrupt service routines (ISRs), the "*conventional software technique*" operates such that "*a user can*

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specify a particular number of data fields for collection analysis," and provides for *"enabling the CRC module to receive the first data field"* such that *"the CRC module starts to collect data ... based upon the occurrence of the vertical synchronization pulses which define the pixel's (sic – data field) boundaries"* Furthermore, the *"conventional software technique"* operates such that *"(o)nce the desired field count has been reached, all of the accumulated CRCs are examined,"* [0022-0027]. A comparison of the flowchart used by applicant's software embodiment (Fig. 5) with the flowchart used in the *"conventional software technique"* (Fig. 1) appears to show no relevant difference with respect to activation of the CRC check other than that the *"conventional"* CRC process waits for an *"interrupt"* rather than an *"enable"* signal. Inasmuch as the means (Fig. 6) for executing applicant's software embodiment is a generic computer, it is not apparent how the *"enable"* signal of applicant's software embodiment can be anything other than an interrupt signal, and thus it is not apparent how the *"enable"* signal of applicant's software embodiment is generatable in a manner any more timely than an *"interrupt"* signal.

The *"DETAILED DESCRIPTION OF THE INVENTION"* section continues by stating that *"during bench testing, ... software routines ... are impractical"* and that *"bench testing"* arrangements instead typically use *"more flexible and dynamic testing methods, such as register access"* [0028]. Thus it again appears that a discussion of the prior art is placed in the wrong part of the disclosure. Furthermore, no explanation is provided for why software is believed incapable of supporting *"register access."* The

examiner believes that software is capable of supporting "register access," and thus the specification appears to be poorly worded and confusing on this point.

The disclosure continues by stating that "conventional register access provides testers with a more convenient and more flexible testing technique" [0028] without explaining why such would be the case. The disclosure also states that, with "conventional register access," the operation is such that "the associated check sum values are often inconsistent ... (due to) an inability to precisely time the CRC module enablement with specific boundaries of the CRC fields" [0028], without explaining how "register access" makes a tester susceptible to timing problems in "CRC module enablement ." The disclosure further states that "register access techniques fail to provide testers with an ability to quickly change and specify the number of data fields to be recorded for the check sum analysis" [0028], leaving it entirely unclear as to why the disclosure had also described the "conventional register access" technique as one that "provides testers with a more convenient and more flexible testing technique."

Fig. 2 is described as showing "the data fields stored within a memory of the CRC module during check sum testing" [0029] in accordance with the operation of the "conventional software technique" shown in Fig. 1. Applicant notes with regard to Fig. 2 that "the bench testing method does not always know when the synchronization markers occur" [0030] and that "CRC module interrupts ... do not occur in synchronism with the synchronization markers ... and conventional bench test debugging will produce inconsistent check sum values because of the indistinguishable data fields" [0031], again without explaining why such would be the case for a "conventional software

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technique" or a *"conventional register access"* technique, if it is the case that either technique is capable of functioning correctly outside of a *"bench testing"* environment as previously described [0022-0027], including *"enabl(ing) the CRC module to time the interrupts with occurrence of a synchronization marker at desired times"* [0023] and *"enabling the CRC module to receive the first data field"* [0024].

Regarding Fig. 3, it is stated that *"a CRC enablement bit 314 ... can be provided in real time by a user"* [0034], however it is not explained how it is possible that input generated by the (presumably human) *"user"* is capable of selecting the correct data fields for CRC analysis while a software-generated interrupt is not, especially given the high rate at which video sync markers presumably appear in the video signal. Fig. 3 shows a blank box (312) for performing the function of intercepting a CRC enable signal (314) and of apparently gating the enable signal to the CRC module responsive to a received sync marker in order to create a synchronized *"interrupt"* (316) for the CRC module (308). It is not apparent how the prior art methods mentioned by the disclosure would work under any circumstances if lacking such basic, seemingly minimal, synchronization processing. The description of Fig. 3 does not mention the purpose of one of the signal lines (322), which is presumed to be for carrying a synchronized disable signal, and furthermore mentions no disable input to the CRC module (308). Further with regard to the description of Fig. 3, *"desirable"* [0035], [0036], presumably should be *"desired."*

The description of Fig. 4 does not mention the significance of certain indicated timings (400 and 404).

The flowchart in Fig. 5 gives no indication that data fields are stored before the "CRC CheckSums" are "accumulated." Applicant's invention as described, for reasons unclear except in the case of a software embodiment, apparently stores the selected data fields within the "CRC module," although this would apparently have no purpose in a hardware embodiment other than to support an indefinite and seemingly needless delay in the start of CRC calculations. Several different terms, namely "accumulate," "record," "check" and "analyze" appear to be used interchangeably at times.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The following corrections are apparently necessary to remove unclear or misdescriptive language in view of the observation made above regarding the disclosure:

1. An apparatus for conducting bench testing of data fields, comprising:
a memory configured to store a number representative of the number of data fields to be analyzed;
a hardware module, coupled, at least indirectly, to the memory and configured to (i) receive an input data stream, (ii) perform a cyclic redundancy check checksum (CRC) analysis of processing on the received data stream, and (iii) produce an output representative of an actual number of received data fields

analyzed; wherein the input data stream includes synchronization markers defining boundaries of each of the received data fields;

a comparator configured to (i) compare the number stored in memory and the actual number of received data fields for which CRC has been processed and (ii) produce a disabling signal when the actual number matches the required number stored in the memory; and

a detector coupled to the comparator and configured to (i) receive the input data stream and ~~sensing a presence of~~ sense the synchronization markers, (ii) receive the disabling signal, and (iii) disable the module when the disabling signal is received.

2. The apparatus of claim 1, wherein the module commences the ~~analysis processing~~ processing in ~~substantial~~ synchronism with a first of the synchronization markers; and wherein the module is disabled in ~~substantial~~ synchronism with another of the synchronization markers.

...

4. The apparatus of claim 1, wherein the hardware module is configured to receive vertical synchronization pulses markers.

5. The apparatus of claim 4, wherein the hardware module is configured to receive the a vertical synchronization marker during video blanking.

...

7. A method for performing cyclic redundancy checksum (CRC) ~~analysis processing~~ processing of video data in a bench testing system including a memory and a CRC module coupled, at least indirectly, to the memory, the video data including (i) a number of data fields and (ii) synchronization markers defining boundaries of the data fields, the method comprising:

storing a number in the memory, the number being representative of an ~~amount~~ the number of data fields to be checked; and

receiving the ~~particular number of~~ data fields and their associated synchronization markers in the CRC module; and

storing ~~the a~~ a number of data fields equal to the number of data fields to be checked, ~~substantially~~ in synchronism with a first synchronization marker associated with a beginning of a first received field of the ~~particular number of~~ data fields.

8. The method of claim 7, wherein the CRC module ceases receiving the ~~particular number of~~ data fields in ~~substantial~~ synchronism with a last marker associated with an end of a last of the received fields of the ~~particular number of~~ data fields to be checked.

9. An apparatus configured to ~~performe~~ perform cyclic redundancy checksum (CRC) ~~analysis~~ processing of video data, the video data having a plurality of data fields and a synchronization ~~marker~~ markers defining boundaries of each of the data fields, the apparatus comprising:

a memory configured for storing a number, the number being representative of a quantity of data fields to be checked;

a CRC module coupled, at least indirectly, to the memory and configured to receive the ~~particular number of~~ data fields and the synchronization markers ~~associated with the received particular number of data fields~~; and

a sensing device coupled to the CRC module and configured to sense the synchronization markers; and

wherein the CRC module commences ~~receiving~~ processing the ~~particular number of~~ data fields ~~substantially~~ in synchronism with a first sensed synchronization marker.

10. The apparatus of claim 9, wherein the CRC module ceases ~~receiving~~ processing the ~~particular number of~~ data fields in ~~substantial~~ synchronism with a last sensed synchronization marker.

Allowable Subject Matter

5. Claims 1-12 would be allowable if rewritten or amended to overcome the rejections under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Conclusion


6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Baker whose telephone number is (571) 272-3814. The examiner can normally be reached on Monday-Friday (11:00 AM - 7:30 PM).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Stephen M. Baker
Primary Examiner
Art Unit 2133

smb